EXECUTIVE SUMMARY

Way to Go, Seattle! is part of the City's effort to improve transportation systems and provide more transportation choices. It was designed to show people that they could save money and make their communities more livable by making more conscious transportation choices. ***Way to Go, Seattle!*** strives to find creative and innovative ways to reduce demand on the transportation network, a practice commonly referred to as Transportation Demand Management, or TDM.

Results of living with "one-less-car":

- 41,463 miles of SOV trips reduced, which is almost enough to drive around the earth *twice*!
- 8,003 fewer drive-alone car trips in Seattle neighborhoods!
- 30,198 pounds fewer CO_2 emissions - if you convert the unemitted CO_2 to a volume measure they can be visualized as 15 six-lane swimming pools full of pollution!
- Households saved an average of $70 per week!
- They all could see they would save money if they didn't own their second car!
- 20% sold their "extra" car after the study!
- All households realized they could live with "one-less-car" and have the mobility they need!
- All will make more conscious transportation choices!
- Reduced SOV miles by 22%!*
- Increased walking and biking mileage by 38% and 30% respectively!*
- Increased transit mileage use by 125%!*

* Figures from *the Fall 2002 round of the study*

Similar to energy and water conservation campaigns that have been adopted in many cities, the ***Way to Go, Seattle!*** Demonstration Study has helped develop a new conservation model for transportation. Our larger goal is to raise the awareness of city residents to think about good air quality and mobility the same way they think about electricity and water – as a resource that should be conserved by behavior changes that can save them money and make a big impact if made collectively. The "One-Less-Car" Demonstration Study is helping us determine both the barriers and incentives to automobile trip reduction, particularly non-work related auto trips.

One of the signature programs operating out of the ***Way to Go, Seattle!*** umbrella has been the "One-Less-Car" Demonstration Study, which aimed to:

1) decrease trips and miles driven by Single-Occupant Vehicles (SOV),
2) raise awareness about the true costs of owning and operating cars, and
3) encourage smart transportation choices where citizens more effectively use the full range of modes available.

The **One-Less-Car Demonstration Study** offers families information and financial incentives to help them reduce automobile use, try other transportation options, and rethink the way they use their car for both commuting and errands or entertainment. A total of three rounds of the study were conducted in Fall 2000, Spring 2001, and Fall 2002. During these three rounds, a total of eighty-six households in Seattle agreed to park one of their cars for either six or nine weeks, and keep a diary of their transportation behavior and choices during that time. Many types of households were represented - single people, couples, with and without children, roommates, young, old - from a wide range of Seattle's neighborhoods.

Participant households were given a weekly study stipend to compensate them for the extensive data they recorded, and for

Bobbie and her son are devoted bus riders since selling their second car as a result of the *Way to Go* project. "I think we're happier and healthier for it."

helping us determine both the barriers and incentives to reducing car trips. The study stipend also served as an economic incentive which simulated the savings they would have in their pocket if they did not own their "extra" car for real. The stipend averaged $85 a week, the amount of money the average second car costs to own and operate (this figure includes all costs such as registration and insurance, maintenance, gas, and parking costs).

Though the sample size of eighty-six participant households is too small to be statistically significant, the data reveals intriguing trends. It appears that with awareness-raising about their actual car costs, education about existing non-SOV modes currently available, having the availability of a multi-modal transportation choices, and the presence of an immediately tangible economic incentive, the collective behavior of the participant households shifted to reduce the number of drive-alone vehicle miles traveled and trips made, and increased the number of miles traveled and trips made using non-drive-alone modes.

Public benefits include less neighborhood traffic and less pollution. Over 60% of pollution contributing to global warming in the Northwest is from driving. Approximately 75% of trips are non-work related, so this is why we're as frustrated by traffic on weekends doing errands as we are during weekday commute hours. The Seattle **One-Less-Car Demonstration Study** provides the basis of an educational effort to get Seattleites to think about their transportation decisions and try riding the bus, participating in car sharing, bicycling and walking and other things that reduce auto trips.

"The weekends were the hardest, with two kids and two soccer games to get to. But we just had to talk about where we needed to go and how we were going to accomplish the day's tasks."
- Sharon

Why do we want to know how to help Seattle residents change their transportation behavior? Because, in the long run, trip reduction can result in cleaner air, less wear and tear on streets, less land devoted to parking, and a shift in thinking about automobile use. This project is a cost-effective experiment to determine what works, and how receptive Seattle residents are to car trip reduction. It has also set the stage for a future public education campaign urging citizens to save money by making wise transportation choices – including potentially selling their "extra" cars. Increasing the mobility options and realizing the costs of driving are particularly important for low-income families where the cost of owning a car has a disproportionate impact on the family income.

Additional long-term benefits will be realized through the planned media campaign based on the One-Less-Car Study which will introduce the concept of "Transportation Conservation" building onto Seattle's past successes of energy, water, and solid waste conservation efforts. We are preparing to launch a pilot version in Fall 2003 under the name of the "**One Less Car Challenge**." Participants will learn that owning fewer cars reduces stress and saves money, and the campaign promotes SOV trip reduction and increasing walking, biking, and busing by providing information about transportation options, and incentives to drive less.

Results show that in the Demonstration Study many cases households were able to give up one of their cars with relative ease by making smart transportation choices including bussing, biking, walking, carpooling, car-sharing, taking taxi rides, and consolidating trips. Study participants not only reduced emissions, neighborhood traffic, and wear on road surfaces, but also realized economic benefits through simulated savings of reduced car ownership costs, reduced their stress by having to deal with driving and parking less, felt more connected to their community, and increased their physical exercise and the amount of quality time spent with family members.

Most households saved an average of $70 per week getting around using non-drive-alone modes of transportation compared to the cost of owning and operating their "extra" car. Between all three rounds, eighteen out of ninety households[1], or 20%, sold their “extra” car after participating in the study (or during the selection process) because they realized both the economic savings possible and the viability of getting where they need to go using other modes, and two of those households sold not one but *two* of their "extra" cars![2] The majority of participants realized for the first time how much their car was costing them per week and per year, and were surprised by how much they were spending. All of the households say they will continue to make more conscious choices about how they travel, and not just hop into the car without thinking if there is another way to get there now that they realize the personal benefits to their quality of life.

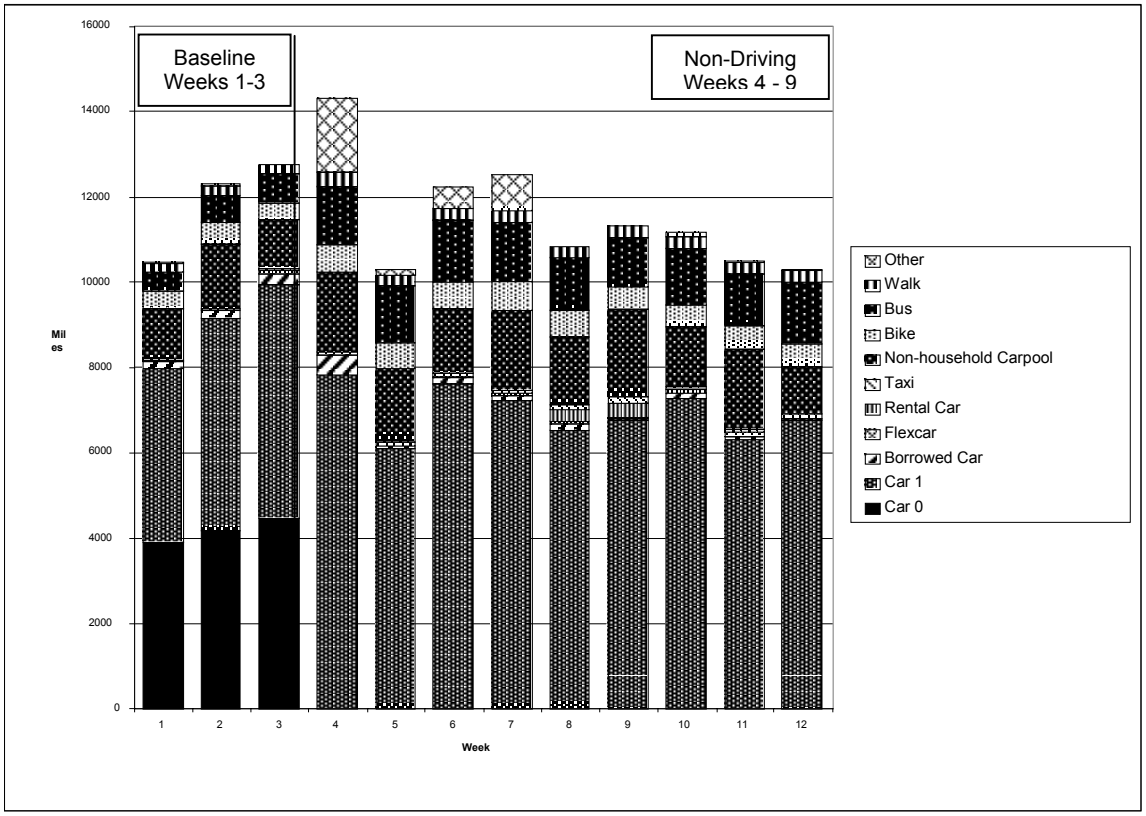

Figure 1[*]: Miles Traveled, All Modes - 2002 Round

Figure 1 shows a summary of transportation choices throughout the study. Participants appear to still have mobility even when living with one-less-car. The transition from the baseline period (weeks 1 through 3) to the Non-Driving period (weeks 4 through 12) can clearly be seen: Although Car 0 is removed after week 3, total miles traveled by all modes do not decrease - in fact, the first week of the test period was the most heavily traveled week of the study. However, total miles driven by Single Occupant Vehicles (SOV), such as Car 0, Car 1, Borrowed Car, Flexcar, Rental Car, of all types do decrease in the Non-Driving period compared to the baseline. Figure 1 shows that the participants shifted much of their Car 0 travel to Car 1, but still had an overall decrease in car trips and trips by all SOV modes. Bus utilization also increased in the

[1] Eighty-six households in the study proper plus four who sold before the start of the second round during the selection process. These four households decided to sell their car before the study began based solely on realizing how much they would save by not owning it, which they discovered by filling out our Car Cost Worksheet as part of the study intake process.

[2] To be eligible for the study, applicants could not have more cars than drivers (so that a 2 driver household would go from 2 cars to 1 car during the study). This is because giving up a car in a household with more cars than drivers is not that hard.

[*] Charts are numbered by their appearance in the "Report on Results" document for the sake of consistency.

Non-Driving period. ("Other" was used by participants to track miles traveled by modes of transportation that are not specifically denoted, e.g. ferry rides.)

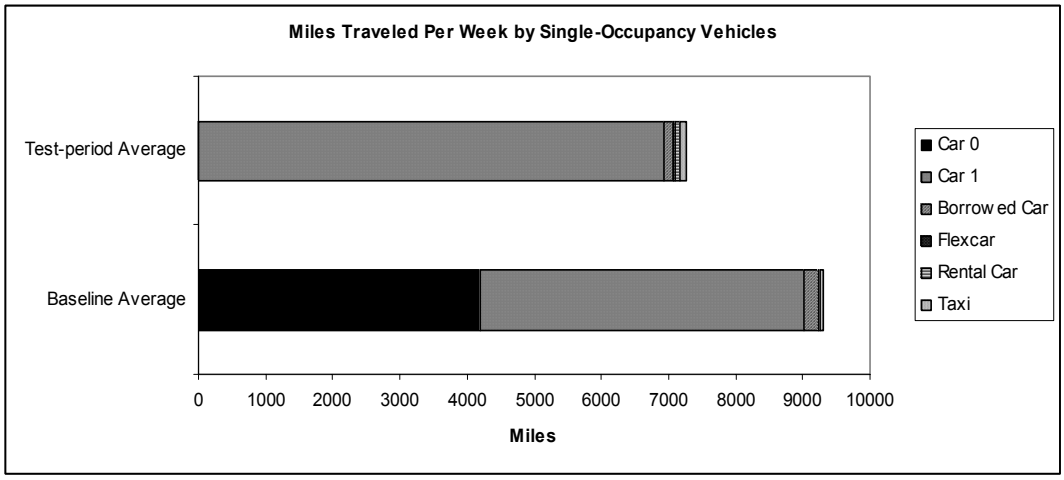

Figure 13*: Miles Traveled Per Week by SOV, Baseline vs. Test Period, 2002 Round

As Figure 13 shows, SOV use dropped measurably in the test period (Non-Driving period) compared to the baseline period, due primarily to the removal of Car 0. Figure 13 shows that Car 1 use increased dramatically in the test period, partially compensating for the lack of Car 0. However, the increased use of Car 1 and other SOV modes in the test period is still significantly less than all SOV modes – including Car 0 – in the baseline, indicating a real reduction took place. It is also clear from Figure 13 that the usage of Cars 0 and 1 dwarfed that of the other modes of single-occupancy vehicle transportation.

In Figure 20 (below), usage of all non-SOV modes of transportation increased in the test period, as participants shifted their transportation usage to other modes of transportation after Car 0 was removed. As noted, there was a reduction in miles by all SOV modes (including owned-vehicles Car 0 and Car 1). Overall, all SOV usage dropped from 227 miles per week per household (in the Baseline) to 177 miles per week per household (in the Non-Driving) – a 22% decrease. (Total SOV automotive transportation - Car 0, Car 1, Borrowed Car, Flexcar, Taxi - is not very different from transportation by Car 0 and Car 1, due to the fact that the relative number of miles traveled by borrowed cars, Flexcar, and taxis are very small compared to the miles traveled in owned-vehicles.)

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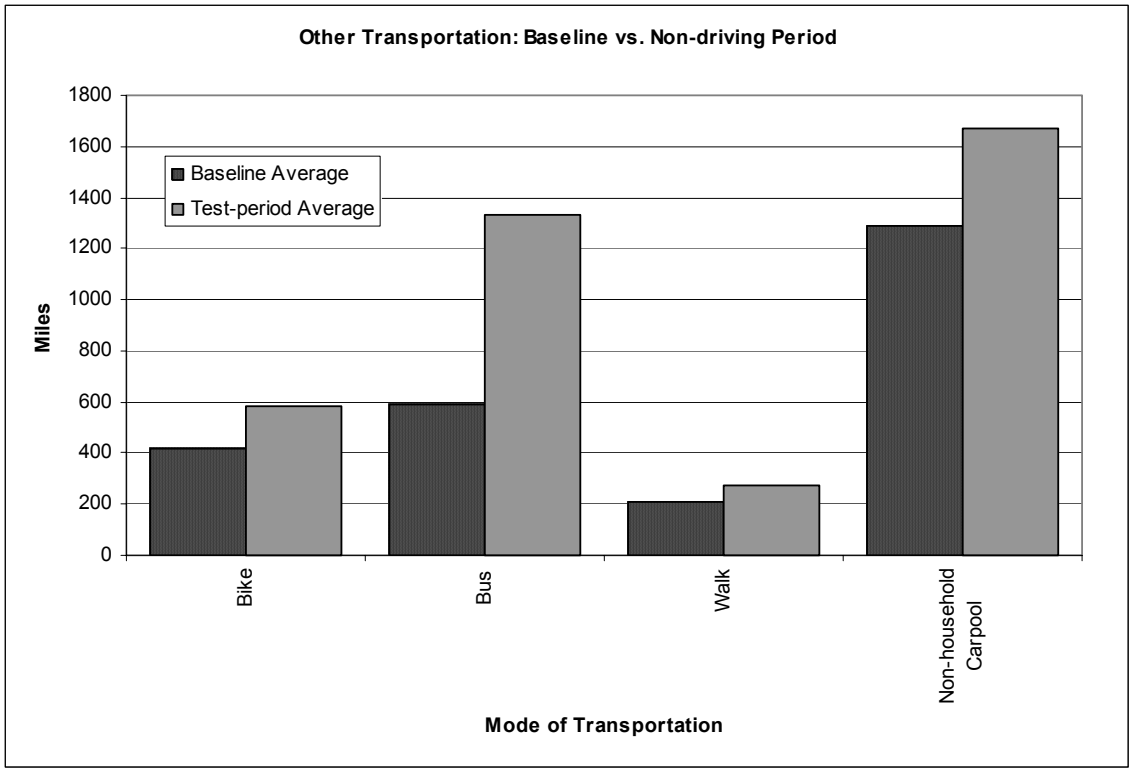

Figure 20*: Non-SOV Usage, Baseline vs. Test Period, 2002 Round

The 2001 round was the only round that gives us comparison between travel behavior both during and after the school year due to its timing (from mid-May to the end of July) across the end of the school year (mid-June). We analyzed the results for 2001 participant families with school-age children in an effort to identify unique changes in transportation habits for this group. Specifically, we were interested in how the end of the school year may have affected trips and miles traveled for those participants with school-age children.

Results reveals curious trends. Once the school year ended, the number of trips for these households with school-age children dropped nearly 20%. However, the number of miles traveled dropped over 100 miles per week from the baseline period to the first three weeks of the test period (up to the end of school). This indicates that these families traveled fewer miles while making the same number of trips as long as their children were in school. Once the school year ended (weeks four, five, and six of the test period), the number of 'miles traveled' fell again, this time to an average of roughly 27% less than during the baseline period. The end of the school year did affect the two 2001 households who worked for the University of Washington (Seattle campus); specifically their miles traveled decreased because they stopped commuting to work around the third week of June, in the middle of the Non-Driving period.

Combining the three rounds of the study together, the eighty-six participant households reduced total miles driven by 41,463 in their collective Non-Driving periods (a period of 21 weeks), or an average of 1,974 miles not driven per week, or 482 miles saved per household. Likewise, participants collectively saved a total of 8,003 fewer car trips in their Non-Driving periods, or an average of 381 fewer trips per week, or 93 fewer trips per household. Finally, the eighty-six households reduced total CO_2 emissions by 30,198 pounds in their Non-Driving weeks, or an average of 1,438 pounds per week, or 351 pounds per household. If you convert the un-emitted CO_2 to a volume measure, you can picture this as about 15 six-lane swimming pools of pollution

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or if you were to condense that CO_2 into elemental carbon, like charcoal, you would have 822 ten-pound bags of charcoal.

A majority of participant households were able to reduce drive-alone trip mileage by using other modes or trip consolidation. In the combined results of 2001 and 2002 studies, when compared against their baseline travel behavior, there was:

- a 27% ***decrease*** in overall drive-alone vehicle miles, and
- a 30% ***decrease*** in overall number of drive-alone trips per week.

At the same time there was:

- a 30% ***increase*** in overall miles traveled using non-drive-alone modes, and
- a 53% ***increase*** in overall number of trips made using non-drive-alone modes per week.

For example, in just the 2002 round alone, when participant households had one less car to use:

- transit use mileage increased by 125%,
- bicycling mileage by 38%, and
- walking mileage by 30%

More simply said, participants reduced auto trips and mileage yet still had the mobility they desired and got around using non-SOV modes instead.

Recycling . . . waste reduction . . . energy conservation . . . water conservation . . . Seattle leads the way and serves as a model for other cities around the country. Could easing in-city traffic and the air pollution it causes be next?[3]

[3] Details and products may be found on the project web site at www.seattle.gov/waytogo